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50X1-HUM

Ordinary carburetors have accelerating pumps which supply the motor with the richer mixture needed for added pickup in passing over to a greater number of revolutions per minute or to increased power, at the instant when the throttle valve is suddenly opened. In the MKZ-K80 carburetor, the variable aperture diffuser does the job of the accelerating pump. When the throttle valve is suddenly opened, the diffuser vanes spread apart momentarily owing to the mechanical action of the lever, and then rapidly draw together again as a result of the action of the contracting spring. The suction at the spray nozzle greatly increases at the instant when the vanes draw together, producing an intensive flow of fuel and thus, the rich mixture needed for rapid pickup. As the number of revolutions per minute of the motor increases, the diffuser vanes gradually open because of the action of the air current. The carburetor feeds a slightly enriched mixture during the whole period of acceleration.

To start the motor, the choke valve is closed entirely, thereby slightly opening the throttle valve by means of a transmitting lever. The aperture between the edge of the throttle valve and the wall of the mixing chamber which gives the best starting performance is 2-2.5 millimeters. Two ribs stamped on the throttle valve facilitate starting.

To prevent the mixture from getting too rich at the first spark with the choke valve fully closed, the choke valve has an automatic valve which opens at the first drop in compression. After the motor starts, the choke valve must be gradually opened as the motor warms up. It should be fully open by the time the motor is thoroughly warmed up.

The throttle valve, when wide open, is at an angle to the axis of the carburetor, and the axis of the valve is displaced 2 millimeters from the axis of the mixing chamber casing. The mixture tends to close the valve as it flows by, and is prevented from doing so by a spring. A sharp rise in the moment of the mixture may close the throttle valve momentarily. To prevent this, the moment of the spring which prevents the valve from closing should also increase sharply. This is accomplished by a projection on the transmitting lever which does not engage the throttle lever in the open position, but offers resistance to it the closer it approaches the closed position. This spring is adjusted so that it maintains the motor's assigned maximum number of revolutions per minute when a load is suddenly removed from it. The governor is regulated on a special jig. When correctly adjusted, the maximum number of revolutions per minute at full throttle should be between 2,300-2,500.

The MKZ-K80 carburetor consists of three basic parts, the air-inlet casing, the float chamber casing, and the mixing chamber casing (outlet). They are all cast of zinc alloy under pressure, and bolted together.

The basic characteristics of the carburetor are as follows:

Diffusor at idling	13.9-14.3 mm
Diffusor (maximum aperture)	32.0-32.4 mm
Diffusor at full power	27.0-27.2 mm
Output of spray nozzle (discharge of water at 20 deg C with a head of one meter)	570-580 cu cm/min
Internal diameter of calibrated outlet from float chamber after setting under pressure (zapressovka)	2.4 mm

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Fuel level in the float
chamber (measured from the
upper surface of the carbur-
etor mounting) under a pressure
of 125-170 mm of mercury

38.5-39.5 mm

Wt. of float including arm

14.5-15.7 gr

The use of the MKZ-K80 carburetor on the ZIS-150 car increased the power of the motor 3-5 percent and improved economy of performance 4-6 percent. The maximum torsional moment in the 1,100-1,200 revolutions per minute range increased from 30.5 to 31.0 kilogram-meters.

The MKZ-K81 carburetor, which is identical with the MKZ-K80 except that it does not have a governor, is used on the ZIS-155 bus.

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